

What is claimed is:

1 1. A method of performing natural language generation, the method comprising
 2 the steps of:
 3 selecting a reference grammar;
 4 applying an input dependency tree to a tree choosing module for using a
 5 stochastic tree model to select syntactic realizations for each node in the derivation tree;
 6 producing a word lattice for the stochastically selected syntactic realization
 7 comprising all possible word sequences permitted by the input dependency structure, the
 8 chosen syntactic realizations, and the reference grammar; and
 9 choosing a linear precedence output string of least cost from the word lattice.

1 2. The method as defined in claim 1 wherein an extended XTAG grammar is
 2 selected as the reference grammar.

1 3. The method as defined in claim 1 wherein the Viterbi algorithm is used to
 2 chose the output string from the word lattice.

1 4. A natural language generator for translating an input dependency syntax tree
 2 into a natural language output, the generator comprising
 3 a tree choosing module, responsive to the input dependency syntax tree, for
 4 stochastically selecting syntactic realizations for each node in the input dependency tree,
 5 the tree choosing module including a tree model database for use in selection;
 6 an unraveling module, responsive to the stochastically selected tree-adjointing
 7 grammar trees created by the tree choosing module and including a predetermined
 8 reference grammar database for creating from the syntactic realizations a lattice of all
 9 possible linearizations of said trees using the reference grammar of said database; and
 10 a linear precedence chooser module for selecting the most likely traversal through
 11 the lattice as the natural language output of the generator.

1 5. The generator as defined in claim 4 wherein the linear precedence chooser
 2 module utilizes the Viterbi algorithm to select the most likely traversal path.

1 6. The generator as defined in claim 4 wherein the unraveling module includes a
2 reference grammar database.

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1 7. The generator as defined in claim 6 wherein the reference grammar database
2 comprises an XTAG grammar database.

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